

COMMENTS ON THE SPIDER *SALTONIA INCERTA* BANKS (AGELENIDAE?)

Vincent D. Roth

Southwestern Research Station
Portal, Arizona 85632

Wynne L. Brown

Department of Biological Sciences
University of Arizona
Tucson, Arizona 85721

ABSTRACT

The female of *Saltonia incerta* (Banks) is redescribed, the presence of large tracheal trunks extending into the thorax is recorded, the epigynum is illustrated and *S. imperialis* Chamberlin and Ivie is placed as a junior synonym. The type locality, now under water, and other collecting sites of this species are discussed. The systematic position of the spider is uncertain because of the agelenid-like external characters and the dictynid-like palpi and tracheal trunks.

INTRODUCTION

Saltonia incerta (Banks) is a rare spider known from an island in the northern part of the Gulf of California and from the shores of the Salton Sea in Southern California. Recently the type specimen, a mature female, was made available by Dr. Herbert Levi of the Museum of Comparative Zoology. We are taking this opportunity to illustrate the epigynum of this species and to review its history.

Saltonia incerta (Banks)

Fig. 1

Cybaeodes (?) *incerta* Banks, 1898:185.

Saltonia imperialis Chamberlin and Ivie, 1942:23, Figs. 24-25. NEW SYNONYMY.

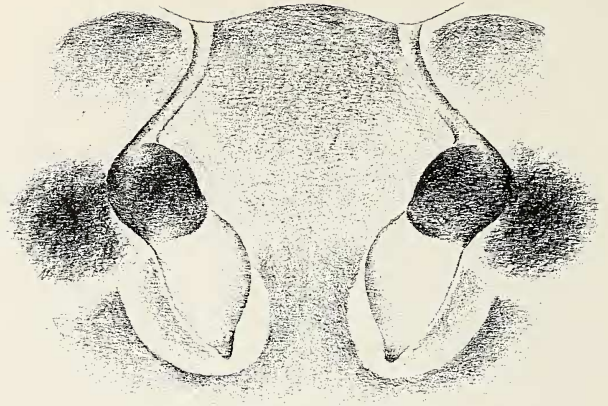
Saltonia incerta (Banks), Roth and Brame, 1972:34, Fig. 46.

The above synonymy was noted by W. Ivie (personal communication) a few years before his untimely death but was not published. The new combination was used inadvertently by Roth and Brame (1972:34) without explanation nor synonymic data.

The female is similar to the male in size and general appearance but differs slightly in the leg spination: tibia I, 1r-2-0; metatarsus I, 2(or 1p)-2-1 median. The slightly sclerotized epigynum has lateral openings under heavily sclerotized ridges (Fig. 1).

The internal genitalia were not examined but appear to consist of an atrium, a pair of globular spermathecae with simple connecting canals extending to the epigastric furrow.

Fig. 1.—Epigynum of *Saltonia incerta* Banks (type specimen).



A male in The American Museum of Natural History shows two large tracheae entering the thorax.

Type data—Adult female and immature (thorax and legs only) from Salton, California (27 March 1897, H. G. Hubbard), in the Museum of Comparative Zoology, Cambridge, Massachusetts, collected from debris on salt crust.

Other Records—*California*: Fish Springs, Salton Sea (12 March 1941, Wilton Ivie), in The American Museum of Natural History, male, under a stick on the open ground. *Sonora*: Isla Pelicano, Mar de Cortes (20 April 1944, B. Osorio Tafall), in The American Museum of Natural History, male.

Two of the three collecting sites can still be located. Unfortunately, Fish Springs is now partially developed into a mineral bath at the Rancho Marina Campground at Desert Shores on the Salton Sea. Salton, California, on the northeastern edge of the Salton Sea, was a railroad station for a salt mining company which worked a nearby salt deposit. This deposit is now underwater but was in the area between the Salton and the Mecca beaches of the present Salton Sea State Park. In 1891 there was a salt marsh west of the railroad at Salton which may be the type locality.

The third locality is questionable as there are three "Pelican Islands" in the Gulf of California (Sea of Cortez), one now nonexistent and the other two somewhat inaccessible. One is known locally as Isla El Alcatraz (Spanish for "The Pelican") and is so recorded on at least one Mexican map (Map 1) but is commonly known by American fishermen as Pelican Island, or Isla Pelicano(s) (Maps 2-4). Elsewhere it is listed as Isla Tassne (Map 5). It is a high rocky mountain with some low sandy land covered with desert brush, located at the edge of Kino Bay at latitude $28^{\circ}49'$, longitude $111^{\circ}58'$. It has none of the salt marshes one finds around the type locality at the Salton Sea.

The oldest maps (Maps 6-7) place Pelican Island near the junction of the Colorado and Hardy Rivers about 10-12 miles upstream from the Montegue and Gore Islands at the mouth of the Colorado River. The diversion and later damming of this river and the subsequent decrease in water flow caused the island to become permanently attached to the river bank and it was essentially lost. These early maps showed two separate islands whereas more recent maps show the islands joined but partially divided at the southern end with a third unnamed island eastward (Map 8). On the latest maps (Maps 9-10) it is called Pelican Island. This island, which is more likely to be the collecting site of *S. incerta*, lies at the mouth of the Colorado River at latitude $31^{\circ}45'$, longitude $114^{\circ}38'$.

The three collections, all containing adult specimens, were made in the months of March and April near salt springs, salt water or salt marshes. Repeated trips to similar

areas including Fish Spring and other springs in the Salton Sea region, Pelican Island at Kino Bay, and along the shores of the Gulf of California have failed to produce additional specimens. Perhaps *Saltonia* has a specialized habitat that has not been exploited by collectors. The similarity of its colulus to two genera of intertidal zone spiders, *Corteza* Roth and Brown and *Desis* Walckenaer suggests that *S. incerta* may be found in a similar marine habitat. *Corteza interaesta* is found at night on rocks and reefs at the upper barnacle zone in the Gulf of California. *Desis* is a widespread genus the species of which are found in rock crevices and worm tubes in the intertidal zone of the Southern Pacific and Indian Oceans from the Galapagos Islands to Eastern Africa.

The systematic position of *Saltonia incerta* remains a puzzle. Banks (1898:185) originally placed it questionably in the genus *Cybaeodes*, commenting, "am uncertain of its position, but I think it very near *Cybaeodes*." Why he placed it in this genus is puzzling since *Cybaeodes* is characterized by its contiguous spinnerets. At that time this genus was placed in the Drassidae by Simon (1893:390) and later Petrunkevitch (1911:532) placed *Cybaeodes incerta* in the Agelenidae. Both Roewer (1954:581) and Bonnet (1956:1297), following Petrunkevitch (1928:175), listed the genus *Cybaeodes*, including *incerta*, in Liocraninae, a subfamily of the Clubionidae. Lehtinen (1967:355) originally placed *Saltonia* in the family Dictynidae, and the subfamily Cybaeinae, but added a footnote on the same page transferring it to Tricholathysinae in the same family without providing evidence for either change.

Except for the widely spaced spinnerets and broad colulus, *Saltonia* has all the external characteristics of the family Agelenidae and will key out readily to this family in Petrunkevitch's (1939:141-148) key to the spider families. The two large tracheal trunks which extend into the thorax are not, however, typical of any of the Agelenidae but are of the Dictynidae.

Recent extensive reclassification of the cribellate spiders and related ecribellate families by Lehtinen (1967), Forster (1970) and Forster and Wilton (1973) leaves one with the alternatives of utilizing a phylogenetic classification without being able to place specimens in their proper family or using an artificial classification and making it possible to place specimens where they might be found by other workers. With spider classification in such a state of flux, it appears to us to be desirable to take a conservative stand and use the family Agelenidae for *Saltonia* for the present, until some of the problems are settled.

LITERATURE CITED

- Banks, N. 1898. Some new spiders. *Canadian Entomol.* 30(7):185-188.
- Bonnet, P. 1956. *Bibliographia Araneorum: Analyse Methodique de toute la literature araneologique jusqu'en 1939.* 2(pt. 2):919-1925.
- Chamberlin, R. V., and W. Ivie. 1942. A hundred new species of American spiders. *Bull. Univ. Utah* 32(13):1-117.
- Forster, R. R. 1970. The spiders of New Zealand, Part III. *Otago, Mus. Bull.* 3:1-184.
- Forster, R. R., and C. L. Wilton. 1973. The spiders of New Zealand, Part IV. *Otago Mus. Bull.* 4:1-309.
- Lehtinen, P. 1967. Classification of the cribellate spiders and some allied families. *Ann. Zool. Fenn.* 4:199-468.
- Petrunkevitch, A. 1911. A synonymic index-catalog of spiders of North, Central and South America with all adjacent islands, Greenland, Bermuda, West Indies, Terra del Fuego, Galapagos, etc. *Bull. Amer. Mus. Nat. Hist.* 29:1-810.
- Petrunkevitch, A. 1928. *Systema Araneorum.* *Trans. Connecticut Acad. Arts and Sci.* 29:1-270.
- Petrunkevitch, A. 1939. *Catalog of American spiders.* *Trans. Connecticut Arts and Sci.* 33:133-338.
- Roewer, C. F. 1954. *Katalog der Araneae.* *Brussels, 2(pt. a):1-923.*

- Roth, V. D., and P. L. Brame. 1972. Neartic genera of the spider family Agelenidae (Arachnida, Araneida). *Amer. Mus. Novitates* 2505:1-52.
- Roth, V. D., and W. L. Brown. 1975. Description of a new genus of Mexican intertidal zone spider (Desidae) with biological and behavioral notes. *Amer. Mus. Novitates* 2568:1-7.
- Simon, E. 1893. *Histoire naturelle des arainées*. Paris, 1(2):257-488.

MAPS CITED

1. Oficina de Cartografia y Talleres, Departamento Geográfico, Tacubaya, D.F. Sonora. No date.
2. World Aeronautical Chart 471, Sonora River, 24th edition, 9 March 1956. U.S. Coast and Geodetic Survey, Washington, D.C.
3. *Ibid*, 26th edition, 17 March 1960.
4. Comision Intersecretarial Coordinadora del Levantamiento de La Carta Geográfica de la Republica Mexicana. Primera Edicion, 1958, Isla Tiburon 12R III.
5. American Geographical Society. Map of Hispanic America, Provisional edition, New York, 1937. Sheet NH-12, Sonora, North America.
6. Derby, George. H. 1852. *In* Report of the Secretary of War, 32nd Congress, First Session. Executive Document 81:11-28. (Map is dated 1850).
7. Rio Colorado of the West, explored by First Lieutenant Joseph C. Ives, 1858. In the University of Arizona map collection.
8. Operational Navigation Chart, H-22, edition 8, 1969. Aeronautical Chart and Information Center, United States Air Force, St. Louis, Missouri.
9. Tactical Pilotage Chart H 22-A, edition 1, 1969. *Ibid*.
10. Tactical Pilotage Chart H 22-B, edition 1, 1971. *Ibid*.